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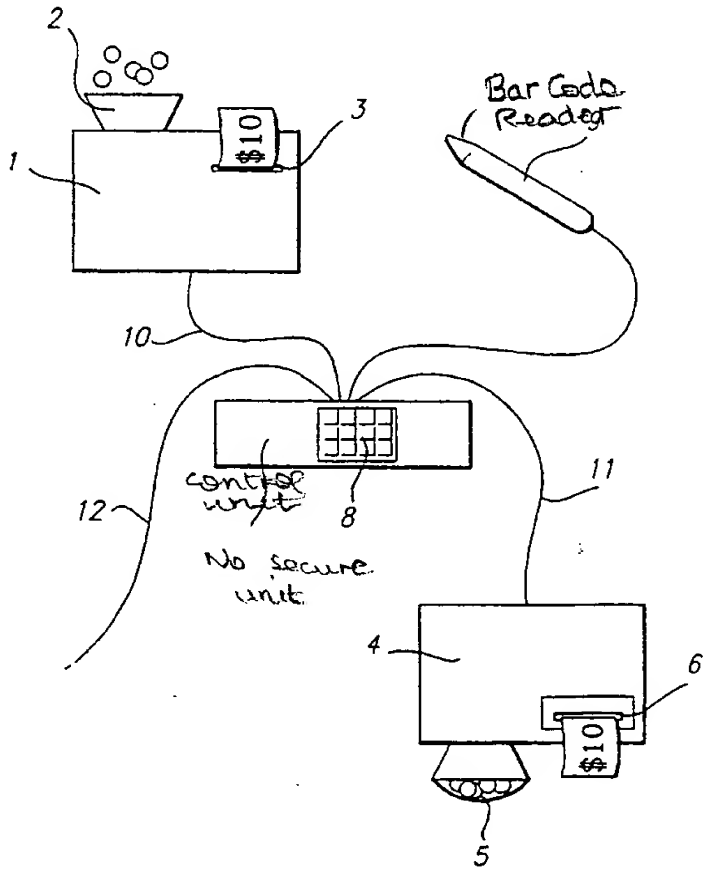
(54) Title: IMPROVEMENTS RELATING TO CASH HANDLING APPARATUS

(57) Abstract

The invention provides a cash register which is a container for receiving and displaying cash. The cash inside the container is not accessible to the shop assistant or the customer. There is a means to insert the price of a purchase or purchases, a display of that price, a means to insert cash, and a means to dispense change which is automatically calculated based upon the amount of cash inserted, which is detected by the register.



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Improvements Relating to Cash Handling Apparatus

This invention relates to cash handling apparatus, and more particularly relates to the apparatus known as a till or cash register, which is used by retail outlets of all kinds.

Currently, when a till or cash register is in use there are the continuing risks that on the one hand the person operating the till or register may be tempted to steal cash therefrom, and also there is the risk of the operator being in danger from thieves who wish to steal the cash from the till or cash register. The latter danger arises especially where the retail outlet having the till or cash register is open late in the evening or indeed is open for 24 hours.

There is a need therefore to provide a cash handling apparatus designed to operate to mitigate these risks and disadvantages, and in accordance with this invention cash handling apparatus comprises a container for holding the cash inserted into the apparatus so that it is not readily accessible either to the apparatus operator or a thief, insertion means for the insertion of cash into the apparatus, detection means for detecting the amount of cash inserted, price infeed means for inserting the price of an article or articles purchased by a customer, and change dispensing means for dispensing the difference in the price fed into the apparatus and the amount of cash inserted as detected by the detection means; the arrangement being that the insertion means and container are arranged so that once the cash has been inserted into the container it is not thereafter readily accessible to the operator, customer or thief.

Not readily accessible may mean that the cash container is in the nature of a strong box which can only be opened by say another person (manager or owner) who has the means to open

the box.)

By this arrangement the apparatus can be operated essentially without access to the cash stored therein, which makes it very difficult for thieves to steal money from the apparatus and indeed making it difficult also for the operator to pilfer cash. The invention therefore has particular applicability for high risk retail outlets such as those open late or open 24 hours and also those retail outlets which are located in particularly dangerous neighbourhoods.

The control technology for such an apparatus can readily be formulated having regard to the control technology which is currently available. Indeed, vending machines use control technology which can be adapted for this particular invention.

In the general use of the invention the till operator upon being approached by a customer to make a purchase or purchases, would enter the price of the purchase or the total price of the purchases, he or the customer would then feed cash into the apparatus through the cash insertion means, and the apparatus would automatically dispense the customer's change, or indeed it may be arranged to indicate when the amount of cash fed in is not sufficient to cover the cost of the purchase or purchases.

The insertion means and the change dispenser preferably are arranged to accept coins and notes and to dispense coins and notes.

The till, as provided in many tills today, may also be provided with programme coding for the articles to be sold so that instead of entering the actual price the operator enters a code for the article so that the price is automatically

produced. This will assist in mitigating fraudulent dealings by the operator.

The basic operation of the machine is that the cash is safely locked inside the machine and there is no simple way for the operator or thief to gain access to the cash.

The apparatus may be adapted so that the price insertion means is in the form of a bar code reader so that as each article is presented for purchase, it has a bar code which is read by the reader and the price is automatically produced. Such scanning and bar code arrangements are already in use in supermarkets.

With such an arrangement sales and prices could be accurately monitored which mitigates against pilfering. An Epos system could be used for effecting such control.

In circumstances where articles are returned for refund, a special secret code number may be provided on a key pad which may or may not form part of the price infeed means. This would preferably be such as to prevent the operator from gaining access to the supply of cash from which the refund is dispensed, the cash dispensed being delivered directly to the person to whom the refund is awarded. Means may be provided for displaying or identifying the amount of the or each refund.

As an additional security measure in relation to the giving of refund as indicated above, the apparatus could be provided with an alarm arranged to operate should an excessive level of refund occur. This may occur for example in a situation in which the operator was being coerced into giving repeated refunds.

By using an Epos system it might also be possible automatically to block any refund which did not correspond with the a specific sale made within a specific period.

The accompanying diagrammatic drawing shows in the single figure the elements of basic apparatus according to the invention.

Unit 1 is the container which will be of strong box character so that access is difficult, and it will be fixed securely at the retail outlet location so that a thief cannot simply carry away the entire unit.

Unit 1 has coin and note insertion apertures 2 and 3 for the insertion of the customer's cash.

Unit 4 is the coin and note dispensing mechanism having a coin dispensing tray 5 and a note dispensing slot 6.

Unit 7 is the control unit and provides a price insertion pad 8, which may be a bar code reader, keyboard or alternative arrangement. The bar code reader is indicated by reference 9.

The units are linked by connections 10 and 11, and an additional central and remote connection 12 provides a link to a central monitoring, alarm and checking system. The remote control system may also keep a watch on the amount of cash and notes available in the dispenser to ensure that there will be sufficient change in the unit 4 to enable the apparatus to continue functioning.

The central control unit may be arranged to send signals to the local apparatus at the retail outlet to indicate to the operator the general condition of the apparatus and an

indication of whether or not it can continue to perform its function. The type of monitoring which would be beneficial would be monitoring of the type of articles sold, the number sold in a particular period, to give an indication of the need to re-order or to indicate whether or not to discontinue selling particular articles, all as similar to systems at present in use, and the additional controls which indicate whether or not the change giving section of the apparatus is still able to provide change for customers, and locally at the retail outlet there should be displays of the price of articles and the amount of change to be given.

The effectiveness and desirability of the apparatus will be clearly understood from the above and it will also be understood that it can take many and different embodiments.

The apparatus is a cash register which stores and dispenses cash as distinguished from product or ticket dispensing machines and operate automatically for the dispensing of tickets and products and usually are operational on an unmanned basis in public places.

CLAIMS

1. Cash handling apparatus comprising a container for holding the cash inserted into the apparatus insertion means for the insertion of cash into the apparatus, detection means for detecting the amount of cash inserted, price in-feed means for inserting the price of an article or articles purchased by a customer, and change dispensing means for dispensing the difference in the price fed into the apparatus and the amount of cash inserted as detected by the detection means; the arrangement being that the insertion means and container are arranged so that once the cash has been inserted into the container it is not thereafter readily accessible to the operator, customer or thief.

2. Apparatus according to Claim 1, which is arranged to indicate when the amount of cash fed in is not sufficient to cover the cost of the purchase or purchases.

3. Apparatus according to Claim 1 or 2, wherein the insertion means and the change dispenser are arranged to accept coins and notes and to dispense coins and notes.

4. Apparatus according to any preceding claim, including programme coding for the articles to be sold so that instead of entering the actual price the operator enters a code for the article so that the price is automatically produced.

5. Apparatus according to any preceding claim, wherein the price insertion means is in the form of a bar code reader so that as each article is presented for purchase, it has a bar code which is read by the reader and the price is automatically produced.

6. Apparatus according to any preceding claim, wherein to

provide for circumstances where articles are returned for refund, the apparatus embodies a secret code number insertable for example on a key pad.

7. Apparatus according to claim 6, wherein the operator is prevented from gaining access to cash dispensed as a refund, the cash dispensed being delivered directly to the person to whom the refund is awarded.

8. Apparatus according to claims 6 or 7 including means for displaying or identifying the amount of the or each refund.

9. Apparatus according to claim 6, 7 or 8, including an alarm arranged to operate should an excessive level of refund occur.

10. Apparatus according to claims 6, 7, 8 or 9, including means automatically to block any refund which did not correspond with a specific sale made within a specific period.

11. Apparatus according to any preceding claim, which is fixed securely at the retail outlet location so that a thief cannot simply carry away the entire unit.

12. Apparatus according to any preceding claim, including coin and note insertion apertures and for the insertion of the customer's cash.

13. Apparatus according to any preceding claim, including a coin and note dispensing mechanism having a coin dispensing tray and a note dispensing slot.

14. Apparatus according to any preceding claim, including a price insertion means which may be a bar code reader, or

keyboard arrangement.

15. Apparatus according to any preceding claim, including a link connection to a central monitoring, alarm and checking system.

16. Apparatus according to claim 15, wherein the remote control system keeps a watch on the amount of cash and notes available in the dispenser to ensure that there will be sufficient change in the unit to enable the apparatus to continue functioning.

17. Apparatus according to claim 15 or 16, wherein the central control unit is arranged to send signals to the apparatus at the retail outlet to indicate to the operator the general condition of the apparatus and an indication of whether or not it can continue to perform its function.

18. Apparatus according to any preceding claim, set to monitor the type of articles sold, the number sold in a particular period, to give an indication of the need to re-order or to indicate whether or not to discontinue selling particular articles.

19. Apparatus according to any preceding claim including display means which display the price of articles and the amount of change to be given.

20. Cash handling apparatus substantially as hereinbefore described with reference to the accompanying drawings.

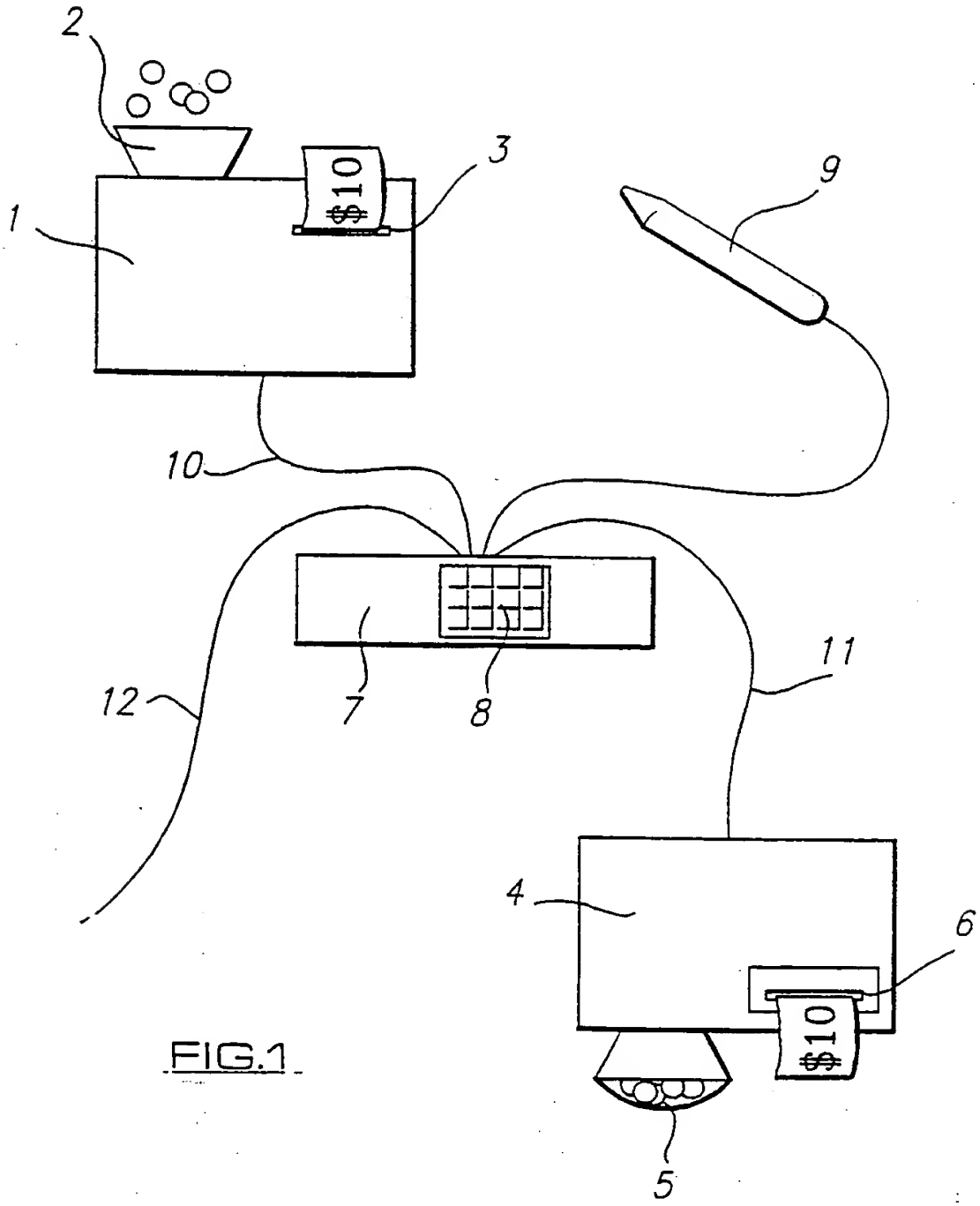

FIG.1

A. CLASSIFICATION OF SUBJECT MAT
IPC 5 G07D1/00 G07G1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 5 G07D G07G G07F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 070 564 (TUCKER) 24 January 1978 see column 1, line 12 - column 5, line 35; claims 1-5; figures 1-3	1-3, 11-13, 15-20
X	US,A,4 310 885 (AZCUA ET.AL.) 12 January 1982 see abstract; claims 1-4,13,20-27,29-37 see column 3, line 41 - column 5, line 34; figures 1-6	1-4, 11-13, 15-20
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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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